

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method of manufacturing a center electrode for a spark plug, comprising the steps of:
press-fitting a core member into a metal cup, the metal cup being formed in a hollow cylinder with one end closed, the core member being made of metal having a higher thermal conductivity than the metal cup; and
thereafter, performing a cold-forging process to form a small-diameter portion protruding axially from at the closed end of the metal cup, wherein the small-diameter portion is smaller in diameter than a transverse cross-section through the cup and core member assembly from which it protrudes.
2. (Currently amended) The method according to ~~claim~~ claim 1, wherein the core member is made of copper.
3. (Original) The method according to claim 2, before the press-fitting step, further comprising the step of cutting a continuous copper wire into individual copper pieces each forming the core member.
4. (Original) The method according to claim 1, wherein the metal cup is made of nickel-base alloy.
5. (Original) The method according to claim 3, after the cutting step and before the press-fitting step, further comprising the step of removing a rough edge or burr from opposite cut end faces of the core member.

6. (Original) The method according to claim 5, wherein the removing step is carried out by an upsetting process in which the opposite cut end faces of the core member are punched or hammered.

7. (Original) The method according to claim 1, before the press-fitting step, further comprising the step of removing a rough edge or burr from the core member.

8. (Original) The method according to claim 7, wherein the removing step is carried out by an upsetting process in which opposite end faces of the core member are punched or hammered.

9. (Original) The method according to claim 1, wherein the press-fitting step is carried out without using oil.

10. (Original) The method according to claim 3, wherein the cutting step is carried out without using oil.

11. (Original) The method according to claim 5, wherein the removing step is carried out without using oil.

12. (Original) The method according to claim 7, wherein the removing step is carried out without using oil.

13. (New) The method according to claim 1, further comprising, after forming said small-diameter portion, setting the cup and core assembly into a die having a large-diameter portion, an intermediate-diameter portion and a small-diameter portion; and

cold-forging the cup and core assembly in said die to cause said cup and core assembly to comprise a large-diameter portion, an intermediate-diameter portion and a small-diameter portion corresponding to said portions of said die.

14. (New) The method according to claim 1, when said performing a cold-forging process comprises setting the assembly of the metal cup and the core member pressed-fitted thereinto into a first die having a small-diameter portion corresponding to the small-diameter portion to be formed at the closed end of the metal cup, and causing the cup and core member assembly to deform to form said small-diameter portion.

15. (New) A method of manufacturing a center electrode for a spark plug, comprising the steps of:

preparing a bottomed cylindrical metal cup formed as a hollow cylinder with an open end,

preparing a solid cylindrical core made of metal higher in the coefficient of thermal conductivity than that of the metal of the metal cup,

press-fitting the core member into the metal cup to form a cup and core assembly;

setting the cup and core assembly into a die having a large-diameter portion, an intermediate-diameter portion and a small-diameter portion; and

cold-forging the cup and core assembly in said die to cause the cup and core assembly to comprise a large-diameter portion, an intermediate-diameter portion and a small-diameter portion corresponding to said portions of said die, wherein said small-diameter portion of said cup and core assembly is smaller in diameter than a transverse cross-section through said cup and core member.

16. (New) A method of manufacturing according to claim 15, further comprising, before said setting step and after said pressed fitting step, first setting the cup and core

assembly into a first die defining a first small-diameter portion and performing a cold-forging process to form a small-diameter portion protruding axially from the closed end of the metal cup;

extruding the cup and core assembly to reduce a diameter thereof; and

then setting the cup and core assembly into said die that has said large, intermediate and small-diameter portions.